sensors for example including but not limited to movement sensor, accelerometer, three axis MEMS accelerometer, gyro sensor, depth sensor, pressure sensor, silicon piezoresistive pressure sensor, breath sensor, water sensor, pulse-oximeter, the like, or any combination thereof.

[0022] Optionally breath sensor may be realized as s respiration sensor in the form of a piezoelectric device that measures changes in thoracic and/or abdominal circumference during respiration, which may be utilized to indicate inhalation, expiration and breathing strength and can be used to derive breathing rate.

[0023] Optionally breath sensor may be realized in the form of a strain based sensor to measure the changes in the rib cage diameter by applying an elastic belt pressure to a strain gauge and measuring the resistance changes due to rib cage movements.

[0024] Optionally breath sensor may be provided in the form of a belt comprising at least one or more sensor for example including but not limited to a strain gauge and/or a piezoelectric sensor, induction belt sensor, Impedance pneumography sensor, the like or any combination thereof.

[0025] Most preferably the sensor module and inflation module may be controlled and/or functionally associated with electronic circuitry comprising a controller and communication module.

[0026] Optionally the electronic circuitry disposed in the controllable floatation garment may be controlled and/or in communication with an external controller and/or processing device. Optionally the external processor and/or controller may be provided in optional forms for example including but not limited to smartphone, computer, dedicated device, PDA, mobile communication device, hand held processing device, mobile processing device, or the like.

[0027] Preferably the external controller may be in wireless communication with the electronic circuitry and the controller and communication module integrated with the garment. Most preferably communication module may be provided in the form of Bluetooth low energy, Wi-Fi, or the like as is known in the art.

[0028] Optionally the device may further comprise a user interface that is functionally associated with the electronic circuitry and controller module. Preferably the user interface provides at least one of visible, audible and/or tactile cues and/or messages to a user prior to deploying and/or inflating at least one or more inflation balloon and/or bladder. Optionally the display may comprise at least one or more of a LED (light emitting diode), speaker, and/or tactile pad for example in the form of a piezoelectric pad, the like or any combination thereof.

[0029] Optionally user interface further comprises an override button and/or shutoff button and/or circuit breaker button provided to prevent deployment of at least one or more inflation balloon. Most preferably user interface override button provides a user with a small window of time within which balloon deployment may be circumvented by activation of an override button.

[0030] Optionally the garment according to optional embodiment of the present invention may be integrated with the sensors wherein optionally the garment thread may itself encase and/or envelope a sensor. Optionally the garment according the present invention may be provided from electronic textile providing for integrated sensors within the garment.

[0031] For example, electronic textiles (e-textiles) are fabrics that have electronics and interconnections woven into them, with physical flexibility and size that cannot be achieved with existing electronic manufacturing techniques. Components and interconnections are intrinsic to the fabric and thus are less visible and not susceptible to becoming tangled together or snagged by the surroundings. An e-textile may be worn in everyday situations where currently available wearable computers would hinder the user. E-textiles can also more easily adapt to changes in the computational and sensing requirements of an application, a useful feature for power management and context aware.

[0032] For example, electronic textile may be provided from piezoresistive fabric. Optionally piezoresistive fibers sensors can be produced when the used conductive yarn is coupled with an elastomer, for example Lycra to produce a multi-layered formation.

[0033] Optionally the inflatable balloons and/or bladder may be filled with at least one or more gaseous flowing fluid selected from air, carbon dioxide, nitrogen gas, inert gas, or the like.

[0034] Optionally the balloons and/or bladders may be filled by way of a chemical reaction releasing an expandable flowing fluid and/or a gas.

[0035] Optionally the balloons and/or bladders may be filled triggering a reaction signaling to inflate the balloons and/or bladder. Most preferably inflation is triggered with a trigger for example including but not limited to an electromagnetic trigger, mechanical trigger, chemical trigger, the like or any combination thereof. Optionally the trigger initiating the inflation may be provided in the form of a solenoid, spark plug, latch, a compressed bellow, the like or any combination thereof.

[0036] Optionally the inflatable balloon and/or bladder may be provided in various shapes and size, for example including but not limited to flat, cylindrical, spherical or the like.

[0037] Optionally the inflatable balloon and/or bladder may be distributed along the surface of the garment in any given pattern or formation. For example, the surface of the garment may have a plurality of inflatable balloons and/or bladders that form a matrix like configuration. Optionally the garment's surface may be distributed and/or dispersed with a plurality of fillable bladders in a matrix like pattern, checkerboard pattern, or any pattern.

[0038] Optionally the inflatable balloon may be provided form a single piece. Optionally the inflatable balloon and/or bladder may be provided from a plurality of balloons and/or bladders. Optionally the inflatable balloon and/or bladder may be provided from a plurality of interconnected balloons and/or bladders.

[0039] Optionally the plurality of balloons and/or bladders may be standalone having individual triggering events wherein each balloon and/or bladder is individually inflated. Optionally the plurality of balloons and/or bladders may be sequentially inflated and/or filled with at least one or more triggering event. Optionally the plurality of balloons and/or bladders may be collectively and/or substantially simultaneously inflated and/or filled with a single triggering element.

[0040] Optionally the inflatable bladder and/or balloon may be filled with at least one or more triggering events. Optionally the inflatable bladder and/or balloon may be filled with a plurality of controllable triggering events.